

UNITED STATES MARINE CORPS  
Logistics Operations School  
Marine Corps Combat Service Support Schools  
PSC Box 20041  
Camp Lejeune, North Carolina 28542-0041

MTCC 4413

**STUDENT OUTLINE**

**PREVENTIVE MAINTENANCE CHECKS AND SERVICES M-66 RING MOUNT**

**1. MACHINE GUN MOUNT CONTROLS**

a. Machine gun mount controls are the items of the mounts necessary for the operator to install and secure a machine gun on the mount. Additional controls are such items as travel lock pins, which are installed through the pintle and the cradle to hold the machine gun and mount in a horizontal position. The travel lock pin must be removed before the operator can elevate or depress the machine gun.

b. The M-66 .50 cal machine gun mount has, in addition to the travel lock pin, a travel lock tie bar which is spring-operated. The bar is attached to the pintle and connects to the lower portion of the cradle. The machine gun and cradle must be moved to maximum depression and the operator must lift up the spring-loaded tie bar. Then insert the end of the tie bar into the forward end of the channel located on the bottom of the cradle. Hold the tie bar in the channel and elevate the machine gun and cradle to a horizontal position. To release the mount tie bar from the cradle, the operator must move the machine gun and cradle to maximum depression. The spring-loaded tie bar will then disengage from the cradle and the mount will be free for operation.

c. This mount also has a spring-loaded equilibrator. The equilibrator, when adjusted properly, will counter-balance the weight of the machine gun and a box of ammunition. It should hold the machine gun in a horizontal position.

d. The ammunition tray assembly has a cam lock, which holds the tray in position on the cradle. The pressure foot is to be set on top of the ammunition and will prevent the ammunition from falling out of the box when the mount is at maximum elevation.

## **2. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)** **INTRODUCTION TO PMCS TABLE.**

a. General. Your PMCS table (table 2-1) has been provided so you can keep your equipment in good operating condition and ready for its primary mission.

b. Warnings and cautions. Always observe the WARNINGS and CAUTIONS appearing in your PMCS table BEFORE, DURING, and AFTER you operate the equipment. The warnings and cautions appear before certain procedures. You must observe these WARNINGS and CAUTIONS to prevent serious injury to yourself and others or to prevent your equipment from being damaged.

c. Explanation of table entries.

(1) Item Number column. Numbers in this column are for reference. When completing DA Form 2404, Equipment Inspection and Maintenance Worksheet, include the item number for the checks/service indicating a fault. Item numbers also appear in the order that you must do checks and services for the intervals listed.

(2) Interval column. This column tells you when you must do the procedure in the procedure column. BEFORE procedures must be done before you operate or use the equipment for its intended mission. DURING procedures must be done during the time you are operating or using the equipment for its intended mission. AFTER procedures must be done immediately after you have operated or used the equipment.

(3) Item to Check/Service column. This column provides the location and the item to be checked or serviced.

(4) Procedure column. This column gives the procedure you must do to check or service the item listed in the Item to Check/Service column to know if the equipment is ready or available for its intended mission or for operation. You must do the procedure at the time stated in the interval column.

(5) Not Fully Mission Capable If: Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you make check and service procedures that show faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

### 3. ASSEMBLY AND PREPARATION FOR USE.

#### a. Installation of Machine Gun Mount.

(1) Perform before operation PMCS (table 2-1) on machine gun mount, pedestal, and ring mount.

(2) Loosen pintle clamping screw, located on the pintle socket of the pedestal mount or ring mount.

(3) Install the pintle of the machine gun mount into the pintle socket and tighten the pintle clamping screw until the machine gun mount will not traverse in the socket.

(4) On ring mounts, lock the brake assembly to prevent the ring mount from traversing.

(5) Align the holes in the cradle and pintle and insert the travel lock pin.

(6) Install the ammunition tray assembly on the machine gun mount by aligning the tray guides with the cradle guides and lower the tray on to the mount.

b. Installation of Machine Gun. It is essential that operational procedures for the machine gun be followed before installing on a mount. Dangerous procedures such as mounting, dismounting, cleaning, repairing, or operating a machine gun on a mount without first having knowledge of the operation of the machine gun and all safety precautions to be followed could result in injury or death to personnel. DO NOT attempt to mount or dismount or inspect or repair a mounted machine gun without first clearing the machine gun chamber and feedways of ammunition.

#### (1) Installation of .50 Cal Machine Gun.

a Position the machinegun in the cradle, align the front mounting hole of the machine gun with the front mounting hole of the cradle, and insert the front securing pin.

b Align the rear mounting hole of the machine gun with the rear mounting hole in the cradle and insert rear securing pin.

(2) Installation of M240G Machine Gun.

a Place the machine gun into the cradle with the forearm over the platform and engage the forearm hole over the platform hook.

b Push the machine gun forward and down on the butt stock.

c Press the platform catch open to engage the machine gun mounting pin and release the platform catch to close over the mounting pin of the machine gun.

(3) Installation of Ammunition Trays on .50 Cal Mounts.

a Remove the cover from the ammunition box.

b Lift and rotate the pressure straps.

c Place the ammunition and box into the tray.

d Lower the pressure straps to hold the ammunition in the ammunition box.

(4) Installation of Ammunition Box Container Assembly on .50 Cal Machine Gun Mount.

a Unlatch the door assembly.

b Lift the pressure foot and cover assembly upward.

c Place a box of ammunition with the cover removed into the tray.

d Lower the cover assembly with pressure foot on the ammunition.

e Close and latch the door.

**4. OPERATING PROCEDURES.**

a. After loading and preparing machine gun for firing, loosen the pintle clamping screw enough to allow the gun mount to traverse in the pintle socket.

b. On ring mounts, release brake assembly and traverse the machine gun mount around the ring assembly to desired location and lock brake to prevent further movement in traverse.

c. Remove travel lock pin from machine gun mount and/or release the travel tie bar lock. The machine gun may be elevated, depressed, or traversed as required. On ring mounts, to change position of the machine gun mount on the ring, release the brake and rotate the machine gun mount to the desired location and lock brake.

d. After clearing the machine gun, move the machine gun mount on ring assembly to desired location. Place travel lock pin into machine gun mount. Tighten pintle-clamping screw until machine gun mount will not traverse in the pintle socket.

**5. PREPARATION FOR MOVEMENT.** Machine gun and mount may travel at a ready-loaded position with machine gun ready for action, but only when an operator or gunner is present to control and operate the machine gun and mount or as directed by the officer or NCO in charge.

a. Position machine gun mount in desired direction with travel lock pin in place, Tighten pintle clamping screw and/or lock the brake assembly of ring mounts.

b. Install cover when required.

c. Install cover when required and gun tray when directed.

**6. OPERATION IN EXTREME COLD WEATHER.**

a. Preparation for Cold-Weather Operation.

(1) When it is anticipated that the materiel will be operated in cold climates, it will be necessary to prepare it for cold-weather operation. See chapter 3, section I, for lubrication instructions. Before changing grade of lubricant, if is necessary that the parts be disassembled sufficiently to permit complete removal of oil, grease, and foreign matter.

(2) Cleanliness is imperative. Rust, dirt, gummed oil, and grease in the bearing clearance interfere with proper distribution of lubricant, causing stiff action or a complete stoppage in cold weather.

b. Cold-Weather Operating Instructions.

(1) Keep all parts clean. The mechanical procedures for cleaning the materiel are the same as for usual conditions; however, certain precautions must be observed as outlined in (2) thru (6) below.

(2) In cold climates, contamination of lubricants with moisture from snow, rain, or condensation in partly filled containers is the source of many difficulties. Keep containers covered at all times and store in a warm place, if possible.

(3) Leave no unpainted metal surfaces exposed without a protective film of lubricant.

(4) Make a thorough inspection and provide as much protection as possible for all parts. See that the covers are properly installed and securely fastened. If possible, do not fold covers that are wet or frozen.

(5) When the materiel is protected with a cover, moisture may form on metal surfaces. To prevent rusting, remove the cover daily and inspect all exposed surfaces for presence of moisture or ice. If moisture or ice is found, clean the surface thoroughly, dry, and coat sparingly with preservative weapons lubricating oil (LAW) (item 5, appendix E).

(6) Exercise the controls through their entire range, at intervals as required, to aid in keeping the controls from freezing in place and to reduce the effort required to operate them.

## **7. OPERATION IN EXTREME HOT WEATHER.**

a. In hot climates, inspect and clean the materiel as frequently as required rather than at fixed intervals.

b. Clean and lubricate as soon as possible after operation to prevent corrosion.

## **8. OPERATION IN EXTREME DUSTY OR SANDY CONDITIONS.**

a. Inspect and clean the materiel more frequently when operating under sandy or dusty conditions; however, lubricant should be applied sparingly, as oil will collect dust and sand, which act as abrasives.

b. Use particular care to keep sand and dust out of the mechanism when performing inspection, lubrication, or adjustments and repairs.

c. Keep the materiel covered as much as the tactical situation permits. Make certain that the cover is in good condition and securely fastened.

#### **9. OPERATION IN RAINY, HUMID, AND SALT AIR CONDITIONS.**

a. The moisture in the atmosphere will emulsify the lubricants and destroy their corrosion-preventive qualities. Therefore, perform inspection, cleaning, and lubrication more frequently and carefully. Salt in the air, such as occurs in salt-water areas, adds to the corrosive activity of moisture. Salty atmosphere conditions require extra precautions when inspecting, cleaning, and lubricating materiel.

b. Inspect, clean, air, and dry canvas covers more frequently.

**10. LUBRICATION INSTRUCTIONS.** Do not mix lubricants on the same gun mount at the same time. The gun mount must be thoroughly cleaned during change from one lubricant to another. Dry cleaning solvent (item 9, appendix E) is recommended for cleaning your gun mount during change from one lubricant to another.

#### **11. LUBRICATION UNDER USUAL CONDITIONS.**

a. Lubricate all moveable parts of the brake assemblies, pintle clamping screw, backrest pins, and barrel clamp assemblies weekly with a light coat of general purpose lubricating oil (item 7, appendix E).

b. Lubricate mechanical felt as required with general purpose lubricating oil (item 7, appendix E) to keep the felt soft and pliable.

c. Lubricate inside of pintle socket weekly with a light coat of automotive and artillery grease (item 4, appendix E).

#### **12. LUBRICATION UNDER UNUSUAL CONDITIONS.**

a. Lubrication in Extreme Cold Weather.

(1) When operating in cold climates, the gun mounts should be thoroughly cleaned and dried. If possible, cleaning and lubrication should be performed in a warm place.

(2) Lubrication/cleaning intervals should be advanced to daily and the gun mounts operated through the entire range frequently to help prevent freezing that may cause the mounts to become inoperative.

(3) Lubricate all points outlined in paragraph 3-1 when temperatures are 0°F(-18°C) or below with weapons lubricating oil (item 5, appendix E), except gear boxes, where automotive and artillery grease (item 4, appendix E) should be used.

b. Lubrication in Extreme Hot Weather.

When operating in hot climates, the coating of oil necessary for operation and preservation will dissipate quickly. Frequent servicing is necessary. Use general purpose lubricating oil (item 7, appendix E) at all points indicated in paragraph 3-1, except the pintle shank, socket, and gearboxes, where automotive and artillery grease (item 4, appendix E) should be used.

c. Lubrication in Rainy, Humid, and Salt Air Conditions.

(1) When operating in climates consisting of high humidity, moisture, or salt air, more frequent servicing will be necessary.

(2) Lubricate all points indicated in paragraph 3-1 with general purpose lubricating oil (item 7, appendix E), except for those points requiring automotive and artillery grease (item 4, appendix E).

(3) Lubricate as often as necessary to prevent corrosion.

d. Lubrication in Extreme Dusty or Sandy Conditions.

(1) When operating in dusty or sandy areas, it will be necessary to clean and lubricate more frequently. Dust and sand collected by the lubricant will cause abrasive action on the components.

(2) Clean the gun mounts thoroughly and lubricate only the moving components. Do not lubricate the entire exposed metal surfaces, as this would only collect dust and sand. Lubricate very sparingly with general



purpose lubrication oil (item 7, appendix E). Refer to paragraph 3-1.

### **13. MAINTENANCE PROCEDURES / CLEANING.**

a. Fill a suitable container with dry cleaning solvent (item 9, appendix E). Using a bristle brush, clean dirt, grease, and residue from all surfaces. Dry all surfaces with clean dry wiping rags (item 8, appendix E). When using abrasive cloth, make certain not to remove too much metal, as this will change the dimension of components.

b. Using abrasive cloth (item 2, appendix E), remove paint and rust from quick release and securing pins, sides of holes, pintle shanks, and sockets.

### **REFERENCES:**

***TM 1005-13&p/1***